



LASER CUTTING MACHINES

# SIRIUS SERIES



# Efficient Laser Processing

**S**irius, LVD's latest introduction to the CO<sub>2</sub> laser cutting systems market, is designed to provide cost-efficient processing of parts at optimal speed, delivering fast, reliable laser cutting performance that is both high quality and highly affordable.

With a combined axis speed of 3939 in/min, high cutting speeds can be achieved in thin material. High-speed processing combined with the power of the laser and the acceleration of the machine provide dynamic thin sheet cutting.

Sheet referencing is automatically handled with a built-in capacitive height sensor which maintains a constant distance between the head and the plate, compensating for any unevenness in the material.

Sirius is designed with a modular construction, permitting the user to select the configuration that works best for the application and

budget. As a standard unit, the laser cutting system features integrated shuttle tables, which maximize uptime by allowing one table to be loaded while the machine is cutting on the other table. Table change time is under 30 seconds.

This gantry-style laser system is also offered in a Plus model. Sirius Plus is enhanced with additional features and is automation-ready. It can be equipped with LVD's Compact Tower (CT) system for fully automated loading, unloading and storage of raw material and finished parts.

For high quality, highly reliable laser processing with automation ready features in a cost-effective package, Sirius is your solution.



*Sirius 3015*

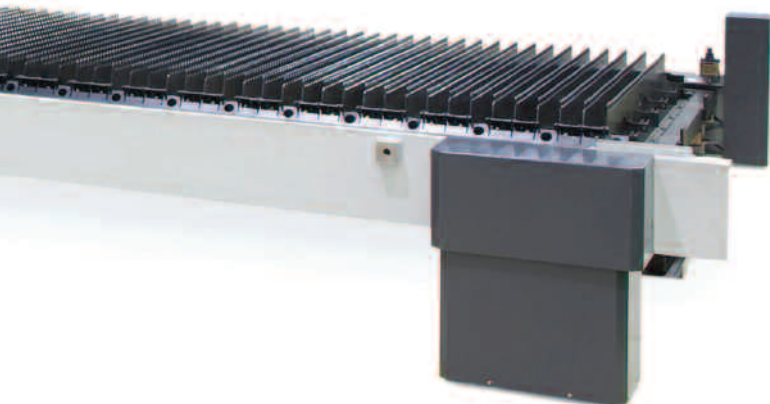
## Sirius

- Compact, small foot-print, gantry-style CO<sub>2</sub> laser cutting system
- Fast processing of thin materials
- Highly rigid design with precision drives ensures high accuracy cutting
- Integrated shuttle table changeover is under 30 seconds
- Low operation and maintenance costs
- Equipped with a single system GE Fanuc laser package, incorporating laser source, control, motors and AC drive amplifiers
- Fanuc 160i-LB CNC control features 10" color screen, large memory capacity
- Features an extensive database of cutting technology for processing a wide range of materials
- Integrated exhaust system and cooling unit
- Pull out scrap containers



*Sirius features an integrated exhaust system and cooling unit.*

- Offers a choice of 2500 W or 4000 W laser source
- Sirius Plus provides enhanced features: NC Focus, Process Control, and automatic shut down
- Optional Compact Tower (CT) system for Sirius Plus
- Optional CADMAN-L 3D software maximizes flexibility and productivity



# Enhanced Performance

Sirius Plus provides enhanced features for a higher level of performance.

In addition to the standard features found on Sirius, the Plus model offers automatic focal positioning, greater process control functionality, and optional Compact Tower automation.



## *Sirius Plus features include:*

- **Process Control** to automatically sense piercing times and detect and control plasma when cutting stainless steel and aluminum. This feature maximizes processing time and minimizes part damage due to loss of cut.
- **NC Focus** provides programmable adjustment of the focal position, eliminating the need for operator intervention to adjust the focal position.
- **Air/Oil Spray device** to safely disperse splatter and lubricate the sheet when processing thicker materials, ensuring part quality is maintained
- **Automatic shut down**



*Sirius 3015 Plus with Compact Tower*

# Maximum Utilization

Sirius Plus can be equipped or retrofitted with a Compact Tower. The Compact Tower is a fully automated unit designed for high production requirements. It uses minimal floor space, is easily accessible, and provides the ultimate cell environment for continuous, uninterrupted work flow.



### *The CT system offers:*

- Simple, compact design
- High flexibility to process a high volume of dissimilar parts
- Highly reliable automated production
- Continuous production for "lights out" manufacturing
- Fully automatic loading and unloading during production cycle
- Safe, efficient handling of workpieces

# Consistently Accurate Cutting



*Quick-change, self-centering lens cartridges*



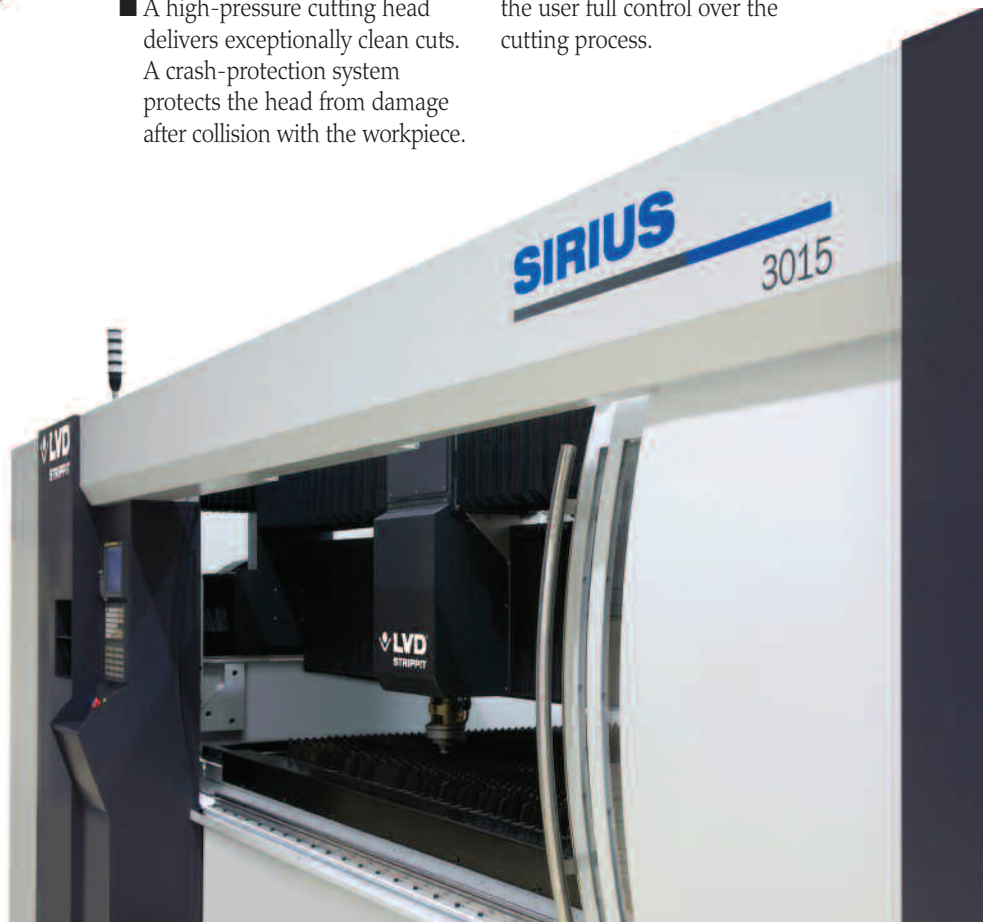
*Integrated laser source and control*

Sirius Series models are engineered to provide consistently high-quality processing results in a system that is easy to set-up and operate.

- A standard laser cutting head accommodates a 5-inch or 7.5-inch quick-change lens for fast changeover and minimal set-up. These water-cooled quick-change lenses can be installed or exchanged very easily, using a self-centering system. Lens calibration is programmable and quick to achieve.
- A high-pressure cutting head delivers exceptionally clean cuts. A crash-protection system protects the head from damage after collision with the workpiece.

- A total power control feature automatically adjusts the laser power in relation to the cutting speed, ensuring an optimal cut at every contour width and minimizing the heat-affected zone.
- The machine's edge function feature processes sharp corners cleanly, particularly in thicker materials.

LVD's Sirius offers the proven reliability of GE Fanuc integrated laser and CNC control, providing the user full control over the cutting process.



# Full Cutting Control

- The RF excited fast axial flow CO<sub>2</sub> laser, CNC control, system drives and motors are fully integrated, ensuring high reliability, as well as low operating and maintenance costs.
- The integrated GE Fanuc PC-based control provides perfect reproduction of programmed contours, producing acute angles at high speed. The laser power is matched to the vectorial



*Integrated GE Fanuc package*

speeds to achieve a constant cut width and a small heat-affected zone.

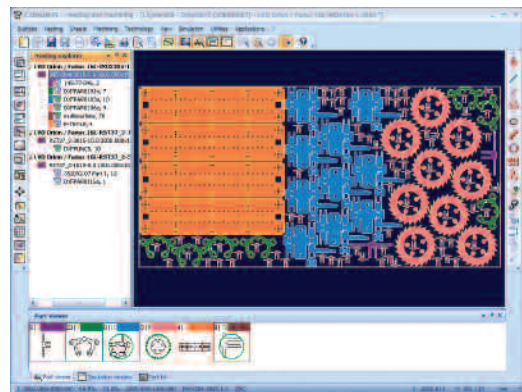
- All parameters, diagnostic and start-up procedures are conveniently displayed on the touch screen.
- The 32-bit control features powerful mathematical capabilities and an extensive material library.
- Sirius is available with a powerful 2.5 kW or 4 kW laser source.



## **Robust Offline Software**

Optional CADMAN-L 3D offline programming software provides a comprehensive laser-cutting CAM package, featuring:

- Flexible lead-in/lead-outs for every kind of contour
- Advanced common line cutting
- Collision avoidance and automatic cutting sequence
- Complete flexibility to manually cut and nest laser parts
- DXF, DWG, IGES, SAT, MI file importation
- Automatic or interactive determination of cutting sequences
- Interactive or optional automatic nesting of different parts and shapes
- High-speed communications via Windows®, networking



*Interactive or automatic nesting*

# Material Handling & Storage

Automation further expands the flexibility and productivity of a Sirius Plus laser cutting system.

## *Compact Tower*

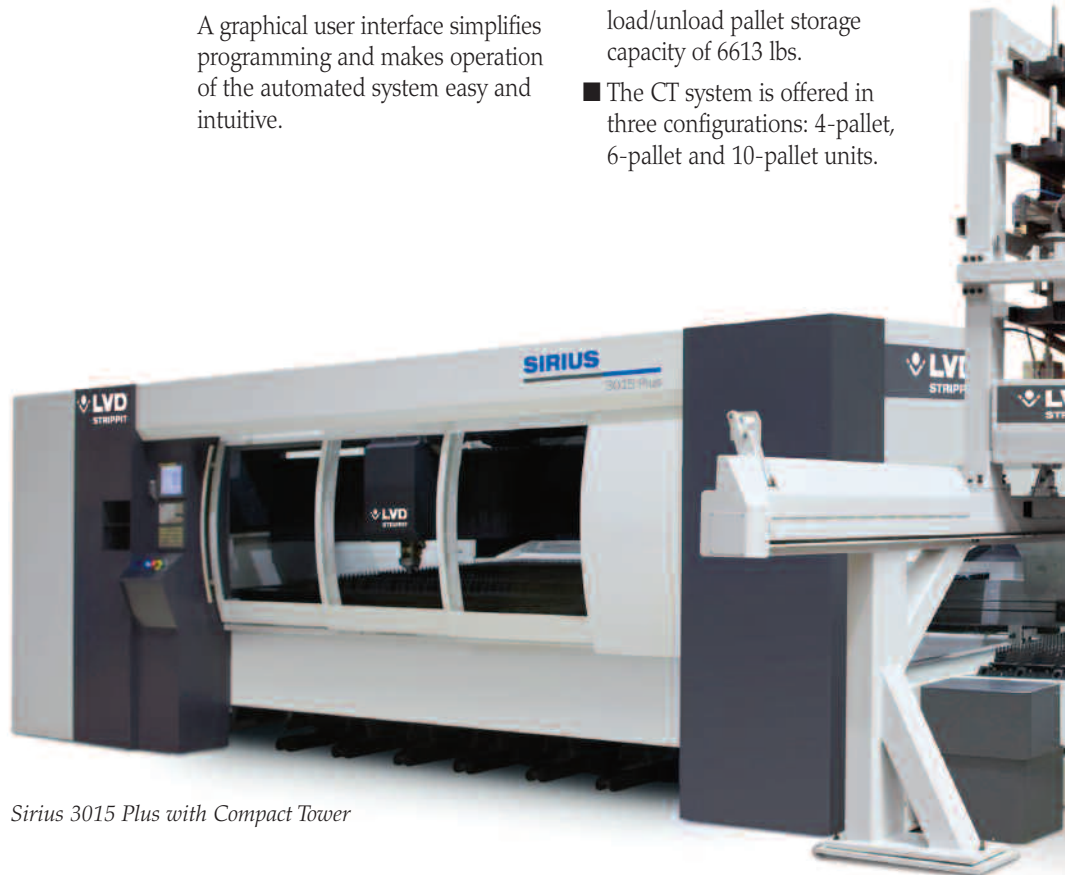
For the ultimate in automated laser processing, LVD's optional Compact Tower system creates a productive, flexible manufacturing cell capable of operating "lights out."

The tower system, working in concert with the material handling unit, provides full capabilities for loading and unloading, and includes a shelving unit for storing raw material and finished parts.

The addition of automation provides fast, efficient processing of materials for continuous, uninterrupted workflow.

A graphical user interface simplifies programming and makes operation of the automated system easy and intuitive.

- Designed as affordable mid-level automation, the space-saving system provides increased productivity by allowing optimal material flow and unattended operation with uninterrupted processing of high quality laser cut parts.
- The CT system provides full capabilities for loading, unloading, and storage of raw material and finished parts.
- Automated material handling system provides unmanned, "lights out" production in a compact cell environment.
- LVD's tower system handles sheets as large as 120" x 60" and material thicknesses up to 0.750" with a maximum load/unload pallet storage capacity of 6613 lbs.
- The CT system is offered in three configurations: 4-pallet, 6-pallet and 10-pallet units.



*Sirius 3015 Plus with Compact Tower*

## Compact Tower System

Pallet construction on the CT is designed for compact set-up and convenient forklift manipulation.

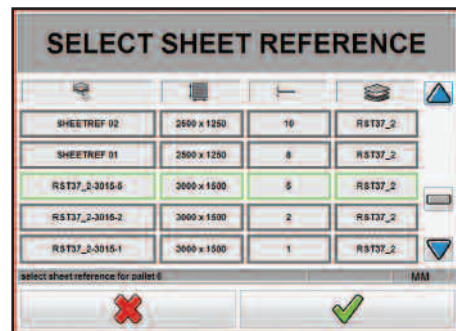
### Job change over cycle:

- Previous job in the joblist finishes.
- The completed pallet of processed parts is moved from the unloading station to the intermediate station.
- An empty unload pallet is moved from the tower into the unload station.

- The empty pallet from the loading station is then moved into the free space created from the previous step.
- A full load pallet is then moved from the tower into the loading station.
- Next job in the joblist commences.

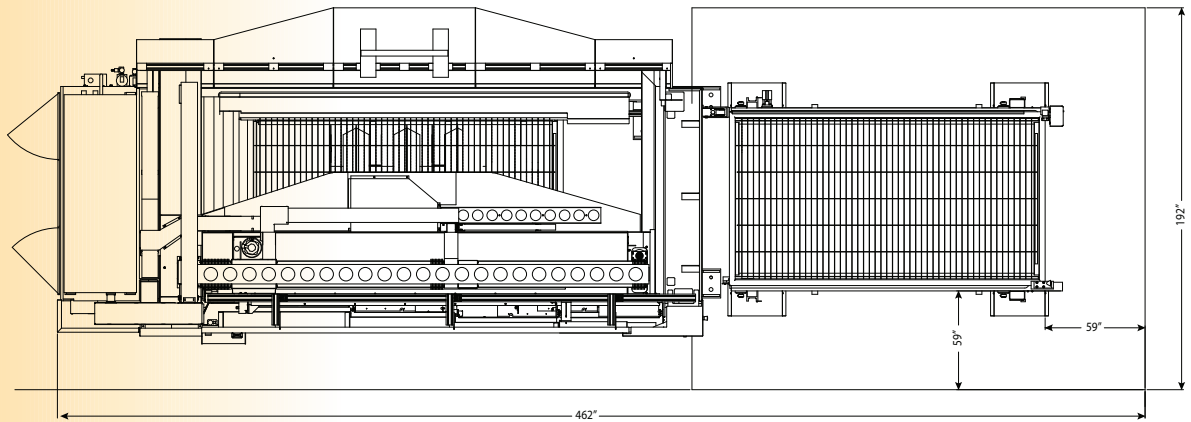
In this manner, the Compact Tower continues delivering material to the machine and evacuating skeletons.

The operator can choose to evacuate or leave the pallet in the intermediate station. The system will automatically move the full unload pallet to the free space available.

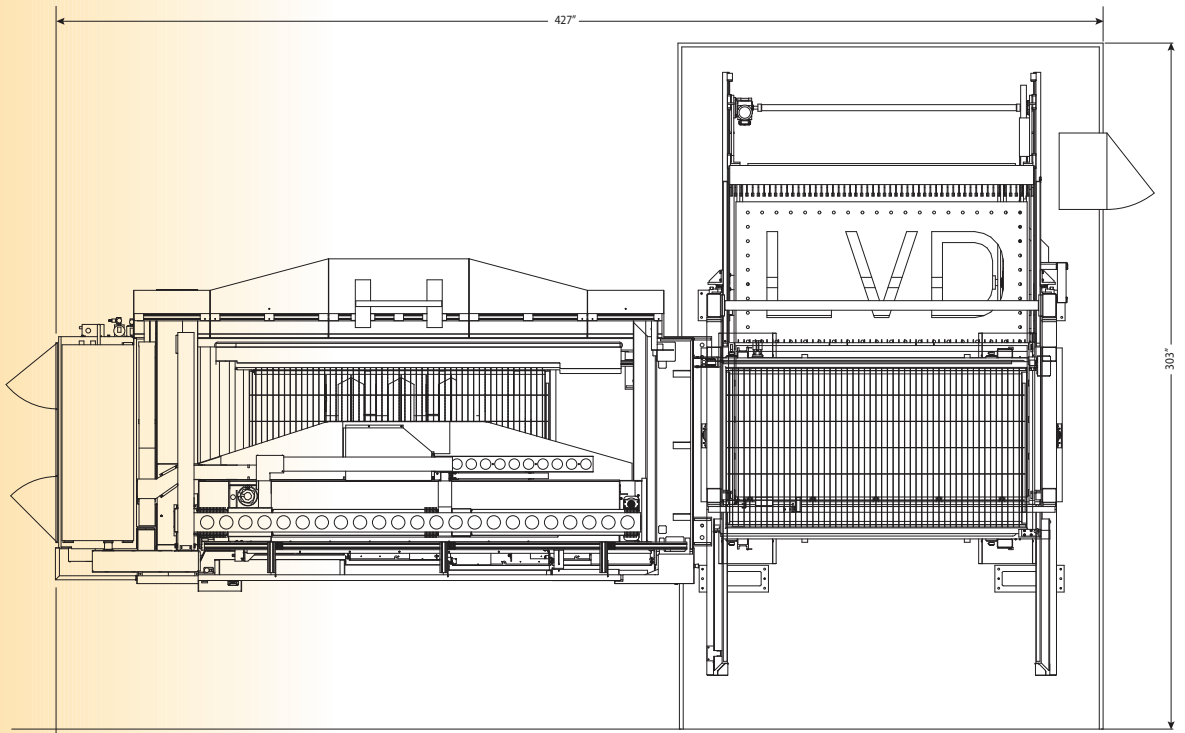


Touch screen graphical user interface for the CT system provides easy and intuitive step by step information for loading, unloading and storage.

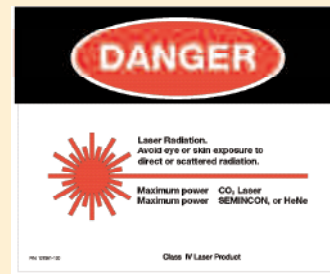
*Sirius 3015/Sirius 3015 Plus*



*Sirius 3015 Plus with Compact Tower*



| Machine  | Sirius 3015                               | Sirius 3015 Plus |
|--|---|------------------|
| Max. sheet size                                      | 120" x 60"                                | 120" x 60"       |
| Max. sheet weight on table                           | 1598 lbs                                  | 1598 lbs         |
| X-axis   | 121"                                      | 121"             |
| Y-axis   | 61"                                       | 61"              |
| Z-axis   | 9.8"                                      | 7"               |
| Max. positioning speed X-Y                           | 3939"/min                                 | 3939"/min        |
| Z-axis   | 1181"/min                                 | 1181"/min        |
| Repetitive accuracy                                  | ± 0.0008"                                 | ± 0.0008"        |
| Positioning accuracy <sup>(1)</sup>                  | ± 0.002"                                  | ± 0.002"         |
| Laser  |   |                  |
| Type   | Fanuc-GE HF excited CO <sub>2</sub> laser |                  |
| Laser Power (± 2%)                                   | 2500 W                                    | 4000 W           |
| Range  | 100-2500W                                 | 100-4000W        |
| Output Stability                                     | ± 1%                                      | ± 2%             |
| Wave Length  | 10,6 μm                                   |                  |
| Pulse Frequency                                      | 5 Hz – 2 Hz                               |                  |
| Laser Gas  | 10 l/hour                                 |                  |
| Cooling Water  | Sealed circuit                            |                  |
| Material Capacities                                  | 2500 W                                    | 4000 W           |
| Max. sheet thickness:                                |   |                  |
| Steel  | 5/8"                                      | 3/4"             |
| Stainless steel (N <sub>2</sub> )                    | 3/8"                                      | 1/2"             |
| Aluminum   | 3/16"                                     | 3/8"             |
| General Specifications (For stand alone machines)    |   |                  |
| Machine dimensions<br>(excluding filter and chiller) | Sirius 3015                               | Sirius 3015 Plus |
| L  | 462"                                      | 462"             |
| W  | 192"                                      | 192"             |
| H  | 86"                                       | 86"              |
| Sirius with Compact Tower                            |   |                  |
| Max. sheet dimensions                                | 120" x 60" x 0.787"                       |                  |
| Min. sheet dimensions                                | 39" x 39"                                 |                  |
| Max. weight of pallet                                | 6613 lbs                                  |                  |
| Max. height of pallet                                | 9.4" including pallet                     |                  |
| Footprint  |   |                  |
| L  | 427"                                      |                  |
| W  | 303"                                      |                  |
| Height of unit:                                      |   |                  |
| 4-pallet:  | 161"                                      |                  |
| 6-pallet   | 194"                                      |                  |
| 10-pallet  | 260"                                      |                  |



(1) Achievable workpiece accuracy depends on the type of workpiece, pre-treatment and sheet size, as well as other variables. According to VDI/DGQ 3441. Specifications subject to change without prior notice.

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